

Claims:

1. A crimping device for creating protruding projections (18), teeth, burrs, crimps or the like on the carrier plate (8) of a brake lining, whereby a tool is driven by means of a compression plate (1) into the carrier plate (8) of the brake lining and subsequently removed from it again, said tool consisting of a number of tool elements (68, 69, 70, 71) that can be adjusted in opposite directions relative to each other and that have cutting teeth, for example, saw blades, and during the crimping process, the tool elements (68 to 71) are moved in a plane along two axes, i.e. in a first axis (20) and in a second axis (21) perpendicular thereto, whereby the first axis (20) essentially corresponds to or lies flush with a face normal of the carrier plate (8) of the brake lining, and positive guiding means are provided for moving the tool elements (68 to 71) in the direction of the second axis, characterized in that positive guiding means are arranged between the compression plate (1) and the tool elements (68, 71), said positive guiding means comprising a wedge slider (64) and a guide slider (52) with corresponding slanted surfaces (65, 66) that are configured for a positively guided movement of the tool elements (68 to 71) in the direction of the first axis (20).
2. The device according to claim 1, characterized in that a spacer (53) is arranged between the compression plate (1) and the wedge slider (64).
3. The device according to claim 1 or 2, characterized in that the guide slider (52) extends through a pressure plate (5) and is guided in said pressure plate (5) by means of a guide element (55).
4. The device according to any of the preceding claims, characterized in that a hold-down device (57) that is spring-loaded by a pressure spring (59) is arranged in the guide slider (52).

5. The device according to any of the preceding claims, characterized in that the wedge slider (64) rests on the pressure plate (5) via a wedge piece (60) , whereby the inclines (62, 63) correspond to each other.
6. The device according to any of the preceding claims, characterized in that the wedge slider (64) is pre-tensioned by means of a pressure spring (67) that rests on the second guide slider (51).
7. The device according to any of the preceding claims, characterized in that the wedge piece (60) is suspended in the pressure plate and rests on it by means of a pressure spring (61).
8. The device according to any of the preceding claims, characterized in that, on a section that passes through the pressure plate (5), the wedge piece (60) has a receptacle for a tool carrier receptacle (67) for the tool elements (68 to 71).
9. The device according to any of the preceding claims, characterized in that the tool elements (68 to 71) have elongated holes (75) arranged in the direction of the second axis through which especially detachable holding pins (76) of the tool carrier receptacle (77) extend.
10. The device according to any of the preceding claims, characterized in that the holding pins (76) are positioned in elongated holes (28) arranged at an angle relative to the first and/or second axes (20, 21), said elongated holes (28) being arranged in faceplates (81, 82) that are securely connected to the guide sliders (51, 52).

11. The device according to any of the preceding claims, characterized in that the positive guiding means are formed by toggle mechanisms (100, 101) arranged on both sides of the tool elements (68 to 72) that, when the compression plate (1) is lowered, move adjacent tool elements (68 to 72) in opposite directions with respect to each other.
12. The device according to claim 11, characterized in that the toggle mechanisms (100, 101) are actuated by means of actuation rods (102, 103) of the press plate (1) that are positioned in the direction of the first axis (20) and that act on toggle links (104, 105).
13. The device according to claim 11 or 12, characterized in that the toggle mechanisms (100, 101) have levers (106, 107 and 108, 109) that can be spread so as to counter the pre-tensioning of spring elements (110, 111).
14. The device according to claim 13, characterized in that the outer levers (106, 109) are connected in an articulated manner to a guide housing (9) and the inner levers (107, 108) are connected in an articulated manner to slide elements (112, 113), whereby the slide elements (112, 113) act on the outside of the tool elements (68 to 72).
15. The device according to any of the preceding claims, characterized in that during one work cycle, each of the tool elements (68 to 71) executes a positively guided, biaxial, swinging or pivoting back-and-forth movement in the plane essentially perpendicular to the carrier plate (8) of the brake lining when the compression plate (1) is lowered and raised.

16. The device according to any of the preceding claims, characterized in that two tools are provided with tool elements (68 to 72) that are at a lateral distance from each other.
17. A carrier plate (8) of a brake lining having projecting teeth, burrs, crimps and the like that is made by means of a crimping device according to one of claims 1 to 16.
18. A method for crimping carrier plates (8) of brake linings by means of a device especially according to claim 16, characterized in that, during one work cycle, one half of each of the two carrier plates (8) of a brake lining is machined together.

Captions to the figures:

Figure 1:

Final position – top

Figure 2:

Final position – middle

Figure 3:

Final position – bottom

Figure 5:

View without compression plate (1)

Figure 6:

Top view without compression plate (1)